

Claims

1. System for profiling the effect of perturbations in a biological system characterised in that it comprises means for recording signals from a sample of the biological system, means for applying a perturbation to said sample and means for comparing signals able to compare
5 signals from said sample before said perturbation is applied to said sample with signals from said sample after said perturbation has been added to said sample.
2. System in accordance with claims characterised in that said means for comparing signals is provided with means for producing an output representing the differences between signals from said sample before said perturbation is applied to said sample and signals from said
10 sample after said perturbation has been applied to said sample.
3. System in accordance with claim 2 characterised in that it is provided with means for comparing the output representing the differences between signals from said sample before said perturbation is applied to said sample and signals from said sample after perturbation has been applied to said sample with outputs representing previously tested perturbations.
- 15 4. System in accordance with claim 3 characterised in that it is provided with means for recognising if the output representing the differences between signals from said sample before said perturbation is applied to said sample and signals from said sample after said perturbation has been applied to said sample is the same as, or similar to, an output representing previously tested perturbation.
- 20 5. System in accordance with claim 3 or 4 characterised in that said system is provided with rank ordering means for ranking the output representing the differences between signals from said sample before said perturbation is applied to said sample and signals from said sample after said perturbation has been applied to said sample against the outputs representing previously tested perturbations.
- 25 6. System in accordance with any of the previous claims characterised in that said perturbation is a drug candidate.
7. System in accordance with any of claims 1-5 characterised in that said perturbation is a disease.
8. Method for profiling perturbations in a biological system characterised by the steps of:

detecting pre-perturbations signals from a sample (21) of a biological system (21) before a test perturbation is applied to said sample and recording said signals;

applying said test perturbation to said sample (21) and detecting and recording post-perturbation signals from the sample (21),

- 5 processing said pre-perturbation and post-perturbation signals in order to produce a perturbation response result which is characteristic of the perturbation.

9. Method in accordance with claim 8 characterised by the further step of comparing the perturbation response result for the test perturbation against perturbation results stored in a database containing previously determined perturbation results.

- 10 10. Method in accordance with claim 9 characterised by the step of rank ordering the perturbation result from the test perturbation against the previously determined perturbation response results whereby the previously determined perturbation response result for a known perturbation which most closely corresponds to the test perturbation response result for the perturbation is ranked highest, the perturbation response result for another known perturbation
15 which next most closely matches the test perturbation response result for the perturbation is ranked second highest, and so on.

11. Method in accordance with any of claims 8-10 wherein said test perturbation is a drug candidate.

- 20 12. Method of doing business comprising the step of providing a database of perturbation response results wherein a perturbation response result is a dataset representing the response of a biological system to a perturbation.

13. Method of doing business according to claim 12 comprising the step of producing drug response results by means of a system or method in accordance with any of claims 1-11.